



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,263	06/24/2003	Mathilde Benveniste		7726

7590	08/15/2007
Mathilde Benveniste 76 Harding Drive South Orange, NJ 07079	

EXAMINER	
SOL, ANTHONY M	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
08/15/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/603,263

Applicant(s)

BENVENISTE, MATHILDE

Examiner

Anthony Sol

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08),<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

- Applicant's Amendment filed 6/20/2007 is acknowledged.
- The previous objections to claims 1-20 are withdrawn.
- No claims have been amended.
- Claims 1-20 have been canceled.
- Claims 21-40 have been added.
- Claims 21-40 are now pending.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 21, 22, 24-28, 31, 32, 34, and 36-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Pub. No. US 2002/0136170 A1 ("Struhsaker").

Regarding claims 21, 31, and 36,

Struhsaker discloses an access point 10 and stations 121, 122, 123 transmitting according to a distributed (para. 140, *present invention uses a highly accurate distributed timing architecture to align the start points of the downlink transmissions,*

see also para. 158) contention-based medium access protocol (see fig. 3, *contention slots 360*) that allows the initiation of transmission in continuous time by said access point if a station is not transmitting and by a station if said access point is not transmitting (see paras. 191-194 and fig. 6).

Struhsaker further discloses requiring the access point with traffic to transmit in one or more beams to occupy or reserve all beams for any length of time (see fig. 6, blocks 615, 625), which may optionally be determined at the time of transmission, and terminating said transmissions or reservations on all beams simultaneously but not necessarily at a predetermined time, thus enabling uplink transmissions to occur only when the access point is not transmitting (see paras. 191-194 and fig. 6).

Regarding claims 22, 32, and 37,

Struhsaker shows in fig. 6, blocks 615 and 625 shows that uplink transmissions are allocated thus all stations refrain from uplink transmissions.

Regarding claims 24, 28, 34, and 38,

Struhsaker discloses that the Broadcast Beam Maps provide data indicating which scanning beam (or beams) are used at which time (measured in symbols or other baud-oriented time unit) for the frame. For each scanning beam used, an uplink map and a downlink map must be provided. The Scanning Beam Map provides the Uplink

and downlink maps. The Scanning Beam Map states at which **time** in the frame, using the scanning beam described in the Broadcast Beam Map, the downlink modulation groups and specific uplink slots with associated CIDs are allocated for the frame using the specific scanning beam (para. 243)

Struhsaker further discloses that the Frame Beam Map also defines the Uplink beam numbers for each subscriber (para. 245)

Struhsaker still further discloses that the uplink map indicates the specific subscriber, modulation format, FEC, and equalizer (cyclo-stationary processing) for the allowed uplink data bursts (para. 247).

Regarding claims 25, 26, and 39,

Struhsaker shows in fig. 6, blocks 615 and 625, allocating uplink and downlink portions of TDD frames. Struhsaker discloses subscriber receiver acquisition and synchronization (para. 234). Struhsaker further discloses that the Broadcast Beam transmits the SOF synchronization field so that all subscribers, even those that are not actively communicating (i.e., idle subscribers) can maintain synchronization (para. 244).

Regarding claim 27,

Struhsaker disclose RF modem shelf receiving new access requests from subscriber access devices in fixed wireless access network 100 and determines **traffic**

Art Unit: 2616

**requirements** (claimed traffic intensity) for each new and existing subscriber in each sector of a single cell site (process step 605)(para. 191).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Struhsaker in view of U.S. Patent No. 6,754,196 B1 ("Daane").

Regarding claims 23 and 33,

Struhsaker does not disclose the access point transmitting dummy frames on certain beams.

Daane shows in fig. 2 that in step 120, the network manager 12 empties the contents of the queues into their assigned slots, and in step 122 transmits the frame on the downlink frequency to all of the devices 14, 16, 18 and 20. Daane discloses that even if the data section of the frame is empty, the network manager 12 still transmits a dummy frame (col. 4, lines 60-65).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the wireless access system that uses selectively adaptable beam forming in TDD frames as taught by Struhsaker to use

dummy frames as taught by Daane. One skilled in the art would have been motivated to make the combination to prevent stations from sensing a busy channel and thus prevent transmitting upstream.

5. Claims 29, 30, 35, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Struhsaker in view of Applicant's Admitted Prior Art ("AAPA").

Regarding claims 29, 35, and 40,

Struhsaker does not explicitly disclose allowing frames to be transmitted by a source before acknowledgement has been received for previously transmitted frames and the destination using a compound acknowledgement for all unacknowledged frames received successfully from the same source and timing the acknowledgement to be sent before the time when control of the channel is relinquished.

The AAPA discloses that according to the 802.11 standard, a station has the option to forego acknowledgements. Another acknowledgement policy being proposed for the 802.11e standard, enables the sending station to relax the requirement for acknowledgement after each frame, but upon request, receive an acknowledgement for receipt of multiple frames (see Applicant's Spec., pg. 12, lines 14-22).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the wireless access system that uses selectively adaptable beam forming in TDD frames as taught by Struhsaker to compound acknowledgements as taught by AAPA. One skilled in the art would have been motivated to make the combination to save bandwidth.

As for claims 30 and 35 concerning compound acknowledgements for stations of same beam, given the proposed policy for the 802.11e standard concerning transmitting an acknowledgement for multiple frames, it would be within one skilled in the art to send a compound acknowledgement for all frames received successfully from stations covered by the same beam with the same motivation as claim 29 above, specifically to save bandwidth.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of




Art Unit: 2616

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Sol whose telephone number is (571) 272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HASSAN KIZOU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600